

Alkaline or carbon zinc household batteries may be disposed of with MSW.

### Batteries



Used automotive batteries are accepted by battery retailers and at the Fairfax County-run citizen disposal locations at the I-66 Transfer Station. Fairfax County recycling centers accept button, rechargeable (NiCad), mercury, and lithium batteries. City residents may also take button batteries to the Falls Church Jewelry Exchange (108 West Broad

Street) and NiCad batteries to the nearest Radio Shack (7935 Lee Highway) for recycling. Alkaline and carbon zinc household batteries may be disposed of with MSW.

NiCad batteries could present a significant challenge if they continue to be disposed as waste in the future. There is the potential for increased amounts of cadmium to be released as the material is either incinerated or landfilled. See Chapter 9 for recommendations concerning battery recycling.

### Generation Rates

Fairfax County does not maintain separate battery collection data for City residents. Therefore, the City is using Fairfax County data to develop per capita generation estimates for used batteries. Table 2-8 includes data for the batteries managed by the county recycling program.

## Solid Waste Generation Projections

### Approach

#### Method

For each major solid waste category, the City of Falls Church established a per capita generation rate on the basis of available historical records of waste generation and disposal. The City then used the generation rates in conjunction with City population projections to estimate waste volumes for the 20-year planning period. The City adjusted these generation rates over the planning period in response to projected impacts of urbanization, intensity of construction activity, economic growth, and recycling trends.



Waste projections in this chapter assume the continuation of the City's current waste management practices.

The City established generation factors by adding total annual City waste disposed and total City waste recycled in each waste category, and dividing by the City population for the year under consideration. The City also evaluated the historical generation rate trends to determine generation rates to be used over the 20-year planning period. ***All waste and recycling projections throughout this chapter assume the continuation of the City's current waste management practices and conditions, unless otherwise stated.***

### Sources of Information

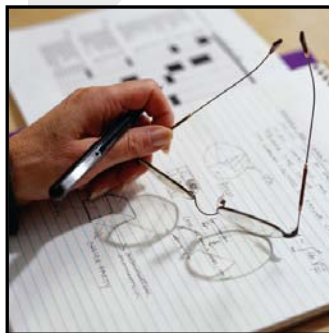
Quantities of City of Falls Church MSW accepted for disposal at the I-66 Transfer Station and Energy/Resource Recovery Facility (E/RRF) are maintained by the Fairfax County Division of Solid Waste Disposal and Resource Recovery (DSWDRR). The City used records maintained by the Fairfax County DSWCR to determine annual City recycling quantities, including yard waste.

For CDD, the City used Fairfax County per capita generation estimates. Fairfax County CDD generation data were obtained from reports published by the VDEQ on annual tonnages accepted by CDD landfills in conjunction with interviews with the CDD landfill and transfer facility operations personnel. Operations personnel estimated historical waste tonnage accepted and the percentage of waste receipts originating in Fairfax County.

For special wastes, the City used Fairfax County per capita generation estimates. Fairfax County used its DSWCR records to determine annual county recycling quantities for tires, used oil, antifreeze, and batteries. Annual quantities of HHW collected by the county were obtained from records kept at the I-66 Transfer Station and I-95 Landfill collection sites. No data were available for RMW generation and disposal in Fairfax County; the county projected RMW from statewide data collected by VDEQ and included in the report *Solid Waste Managed in Virginia During Calendar Year 2002*.

Since the City does not contain a wastewater treatment plant, no wastewater treatment sludge is generated in the City of Falls Church. The City also generates minimal reportable septage, agricultural wastes, mining wastes, and spill residues. Since the City does not expect the annual generation quantities of these wastes to increase, waste projections for these special wastes are not included in this SWMP.

### MSW Generation Forecasts



The City based waste generation projections on the predicted per capita MSW generation rate and population projections for the planning period. In addition, employment projections were used to predict commercial waste generation, as discussed later in this section.

For projections of recycling quantities, the City forecasted its overall, residential, and commercial recycling rates to remain at their three-year averages. Therefore, the City projects that the overall recycling rate will remain at 51.9 percent, the residential recycling rate will remain at 55.5 percent, and the commercial recycling rate will remain at 48.9 percent.

### City of Falls Church Waste Generation Rate

Based upon the average of the past three years, the waste generation rate for the City of Falls Church is 7.10 pcd. The City examined actual per capita waste generation data from 2000 through 2002 (Table 2-3) to determine trends. Recent scale records show a generation rate of 7.05 pcd in 2001, increasing to 7.16 pcd in 2002. This represents an annual increase in City MSW generation of approximately 2 percent.

### Regional and National Per Capita Generation Data

The MSW generation rate in the City of Falls Church is higher than national and regional generation rate estimates. Nationally, the MSW generation rate has remained constant at 4.51 pcd in both 2000 and 1990. Regionally, the Metropolitan Washington Council of Governments estimated an MSW generation rate of 5.8 pcd for the Washington metropolitan area.

**The City of Falls Church developed four alternative projections for MSW to address the probable range of variance in future waste generation rates.**

### MSW Projections

From the differing trends and estimates of MSW generation in the City, the City developed four alternative MSW projections to address the probable range of variance in the future generation rates. Table 2-9 presents the projections of MSW generation and disposal for these four alternatives over the next 20 years. Appendix A includes a more detailed discussion of the development of the City's MSW projections.

*Table 2-9. City of Falls Church MSW Generation and Disposal Projections 2004–2025 (tons)*

Year	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	MSW Generation	MSW Disposal	MSW Generation	MSW Disposal	MSW Generation	MSW Disposal	MSW Generation	MSW Disposal
2004	13,685	6,581	13,822	6,647	13,645	6,561	13,782	6,626
2005	13,743	6,609	14,019	6,741	13,687	6,580	13,962	6,713
2010	14,650	7,045	15,707	7,553	14,492	6,964	15,537	7,467
2015	15,039	7,232	16,946	8,149	14,904	7,163	16,794	8,071
2020	15,428	7,419	18,271	8,787	15,237	7,322	18,046	8,671
2025	15,687	7,544	19,526	9,390	15,434	7,414	19,211	9,229

**MSW disposal quantities are projected to range from 6,561 to 9,390 tons from 2004 to 2025 depending on the year and projection assumptions.**



The City of Falls Church projects its annual MSW disposal quantities will range from 6,561 tons to 9,390 tons between 2004 and 2025, depending upon the year and assumptions that are used for the calculation. While waste will increase with increases in population and employment, the rate of increase is dependent upon recycling rates and costs for disposal. If

recycling rates increase, the City's MSW disposal requirements will be lower. Also, if disposal costs increase enough, MSW disposal quantities

will decrease as residents and businesses find other, less costly ways to manage their waste.

### Yard Waste and Special Wastes

The City also developed waste projections for two components of MSW: yard waste and special wastes. Yard waste projections are discussed below; special waste projections are discussed later in this chapter.



The City projects that yard waste generation quantities will remain at current levels (3,111 tons per year) throughout the SWMP planning period. Since there are few open areas remaining in the City, future population increases will likely not impact yard waste generation quantities. The City calculated the current yard waste generation quantity using the average annual quantity of yard waste generated in the City from 2000 to 2002 (see Table 2-4). *Note that yard waste is a component of MSW and that these projections are also included in the MSW projections.*

**The City of Falls Church developed two alternative projections for CDD to address the probable range of variance in future waste generation rates.**

### CDD Generation Forecasts



The City of Falls Church developed two alternatives for CDD generation projections (Tables 2-10 and 2-11). The first alternative uses a constant generation rate, which is based on the five-year Fairfax County generation rate average of 4.14 pcd. The second alternative assumes the current trend of declining generation rates will

continue over the planning period, with the current generation rate declining at 1 percent per year. Construction activity in the area has been at a high level in recent years, and it is likely to lessen over the planning period; therefore, a reduction in the per capita CDD generation rate for the City is probable.

*Table 2-10. City of Falls Church CDD Generation Projections 2004–2025 (tons), Alternative 1: Generation Rate Remains Constant*

Year	Population	Waste generation rate (pcd)	CDD projection (tons)
2004	10,555	4.14	7,975
2005	10,600	4.14	8,009
2010	11,300	4.14	8,538
2015	11,600	4.14	8,764
2020	11,900	4.14	8,991
2025	12,100	4.14	9,142

*Table 2-11. City of Falls Church CDD Generation Projections 2004–2025 (tons),  
Alternative 2: Generation Rate Decreases at 1 Percent per Year*

Year	Population	Waste generation rate (pcd)	CDD projection (tons)
2004	10,555	4.06	7,816
2005	10,600	4.02	7,771
2010	11,300	3.82	7,878
2015	11,600	3.63	7,691
2020	11,900	3.45	7,503
2025	12,100	3.29	7,255

These projections assume the continuation of the City's current management practices and conditions throughout the planning period.

### Special Waste Generation Forecasts

Table 2-12 shows projected generation quantities for each special waste category. The generation projections are based on the Fairfax County (and Virginia for RMW) per capita generation rates and the City of Falls Church population projections.

*Table 2-12. City of Falls Church Special Waste Generation Projections 2004–2025 (tons)*

Waste	Gen. rate (pcd)	2004	2005	2010	2015	2020	2025
HHW	0.0010	1.9	2.0	2.1	2.1	2.2	2.2
Tires	0.0542	104	105	112	115	118	120
RMW	0.0174	34	34	36	37	38	39
Oil	0.0412	79	80	85	87	90	91
Antifreeze	0.0050	10	10	10	11	11	11
Batteries	0.0037	7.2	7.2	7.7	7.9	8.1	8.3
Population		10,555	10,600	11,300	11,600	11,900	12,100